

Agilent Ref: 10010792-1  
United States Application Serial No. 10/023,375

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**AMENDMENTS TO THE CLAIMS**

1. **(Currently Amended)** A pulse jet printhead comprising:
  - (a) a multiple die printhead comprising:
    - (i) a single orifice plate comprising a plurality of orifices; and
    - (ii) a plurality of thermal printhead dies each comprising a top and bottom surface, wherein said top surface comprises a plurality of resistors and is bonded to a surface of said orifice plate, wherein said resistors are in operational alignment with said orifices to produce at least one firing chamber; and
  - (b) a volume of an aqueous fluid that includes a biopolymer or precursor thereof in said at least one firing chamber.
2. **(Original)** The pulse jet printhead according to Claim 1, wherein said printhead comprises from 2 to about 10 printhead dies.
3. **(Original)** The pulse jet printhead according to Claim 2, wherein said printhead comprises from 2 to 5 printhead dies.
4. **(Original)** The pulse jet printhead according to Claim 3, wherein said printhead comprises 3 printhead dies.
5. **(Previously Presented)** The pulse jet printhead according to Claim 1, wherein each of said printhead dies is a thermal pulse jet printhead die.
6. **(Original)** The pulse jet printhead according to Claim 1, wherein said biopolymer is selected from the group consisting of polypeptides and nucleic acids.
7. **(Original)** The pulse jet printhead according to Claim 1, wherein said precursor thereof is selected from the group consisting of amino acids and nucleotides.

Agilent Ref: 10010792-1  
United States Application Serial No. 10/023,375

8. **(Original)** The pulse jet printhead according to Claim 1, wherein said printhead is present in a printhead assembly that further includes at least one fluid reservoir in fluid communication with said firing chamber.
9. **(Original)** The pulse jet according to Claim 8, wherein said fluid reservoir comprises said aqueous fluid that includes a biopolymer.
10. **(Currently Amended)** A pulse jet printhead assembly comprising:  
(a) a multiple die printhead comprising:  
(i) a single orifice plate comprising a plurality of orifices; and  
(ii) a plurality of thermal printhead dies each comprising a top and bottom surface, wherein said top surface comprises a plurality of resistors and is bonded to a surface of said orifice plate, wherein said resistors are in operational alignment with said orifices to produce a least one firing chamber; and  
(b) at least one fluid reservoir, wherein said fluid reservoir is in fluid communication with said firing chamber.
11. **(Original)** The pulse jet printhead assembly according to Claim 10, wherein said printhead comprises from 2 to about 10 printhead dies.
12. **(Original)** The pulse jet printhead assembly according to Claim 11, wherein said printhead comprises from 2 to 5 printhead dies.
13. **(Original)** The pulse jet printhead assembly according to Claim 12, wherein said printhead comprises 3 printhead dies.
14. **(Previously Presented)** The pulse jet printhead assembly according to Claim 10, wherein said pulse jet printhead assembly is a thermal pulse jet printhead assembly.

Agilent Ref: 10010792-1  
United States Application Serial No. 10/023,375

15. **(Original)** The pulse jet printhead assembly according to Claim 10, wherein said reservoir contains a volume of an aqueous fluid that includes a biopolymer or precursor thereof.

16. **(Original)** The pulse jet printhead assembly according to Claim 15, wherein said biopolymer is selected from the group consisting of polypeptides and nucleic acids.

17. **(Original)** The pulse jet printhead assembly according to Claim 15, wherein said precursor thereof is selected from the group consisting of amino acids and nucleotides.

Claims 18.-28. **(Canceled)**

29. **(Original)** An automated pulse jet printing system, said system comprising a pulse jet printhead according to Claim 1.

30. **(Currently Amended)** A pulse jet printhead comprising:

(a) a multiple die printhead comprising:

- (i) a single orifice plate comprising a plurality of orifices; and
- (ii) a plurality of thermal printhead dies each comprising a top and bottom surface, wherein said top surface comprises a plurality of resistors and is bonded to a surface of said orifice plate, wherein said resistors are in operational alignment with said orifices to produce at least one firing chamber; and

(b) a volume of an aqueous fluid that includes nucleic acids or nucleotides in said at least one firing chamber.

31. **(Previously Presented)** The pulse jet printhead according to Claim 30, wherein said printhead comprises from 2 to about 10 printhead dies.

Agilent Ref: 10010792-1  
United States Application Serial No. 10/023,375

32. **(Previously Presented)** The pulse jet printhead according to Claim 31, wherein said printhead comprises from 2 to 5 printhead dies.
33. **(Previously Presented)** The pulse jet printhead according to Claim 32, wherein said printhead comprises 3 printhead dies.
34. **(Previously Presented)** The pulse jet printhead according to Claim 30, wherein each of said printhead dies comprises a plurality of resistor elements on a surface of a semiconductor substrate.
35. **(Previously Presented)** The pulse jet printhead according to Claim 30, wherein said printhead is present in a printhead assembly that further includes at least one fluid reservoir in fluid communication with said firing chamber.
36. **(Previously Presented)** The pulse jet printhead according to Claim 1, wherein said printhead dies are bonded to a single orifice plate.
37. **(Previously Presented)** The pulse jet printhead assembly according to Claim 10, wherein said printhead dies are bonded to a single orifice plate.
38. **(Previously Presented)** The pulse jet printhead according to Claim 30, wherein said printhead dies are bonded to a single orifice plate.
39. **(Previously Presented)** The pulse jet printhead according to Claim 1, wherein said multiple printhead dies bonded to said orifice plate are parallel to each other.
40. **(Previously Presented)** The pulse jet printhead assembly according to Claim 10, wherein said multiple printhead dies bonded to said orifice plate are parallel to each other.

Agilent Ref: 10010792-1  
United States Application Serial No. 10/023,375

41. **(Previously Presented)** The pulse jet printhead according to Claim 30, wherein said multiple printhead dies bonded to said orifice plate are parallel to each other.